1817

Compound Fractures

by Saw Parke Street

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Preface

After mature deliberation, on the subject of an inaugural essay, the writer of the following sheets, was induced to renounce all speculation and theorizing, considering that the opinions of a youth, could not attract sufficient notice, and would most likely be treated as the vagaries of a vain imagination, and prove tiresome to those who have, the task of perusing, a number of these productions.

He was induced therefore to chuse a practical subject, where plain matter of fact would

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alone fill the pages. He has not the vanity to suppose that he has thrown any light, on the subject, of which he treats, all that he can lay at of is having collected the opinions of some of the most eminent surgeons of modern times and presenting, in a condensed form, the information obtained from a careful and attentive perusal of their excellent works, and from attending the impromptu lectures, of that eminent Surgeon, who fills the chair appropriated to that useful branch of the healing art in this University, with so much credit to himself and advantage to his numerous hearers.

His design is not to teach but merely, to comply with the ordinances of an institution of which he is proud to consider himself an alumnus

Sensible that a critic would find much employment in reviewing this little piece, he cannot but congratulate himself in the reflection

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that men of liberal and philosophic minds to whom only it will be presented, will not expect excellence, but consider it as the production of a youth, who had his wishes alone actuated him would never have obtruded himself on their notice.

It will be seen that he has made free with the works of Messrs Pott, Bell, & Drs Larrey and Dorsey to which he has been indebted for the information acquired on this subject

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Introduction

The human body, from the manner of its formation, and the prosperity of the primeval curse, is subject to various accidents which tend to disorganize and destroy the different parts of which it is composed.

Compound Fractures form a very considerable portion of these accidents, and those persons who generally are most liable to them are found among the useful classes of artizans, and labourers to whom we are under obligations for the numerous necessaries and comforts of life, which we daily enjoy- and it becomes those to whom more auspicious circumstances may have granted an exemption from labour and the means of cultivating science, to endeavour to alleviate the sufferings of their less fortunate brethren. accordingly we find the art of Surgery, attracting

[illegible]

A Compound Fract

(C.F.) is universally allowed to be a fracture of a bone having a communication with the air, the [illegible] of the soft parts, which creates the danger, for an ordinary wound without such a communication will not affect the fracture [illegible] which passes around it will render the cure difficult and hazardous.

This kind of fractures is produced perhaps more frequently than otherwise by the same causes which produce the simple fracture, but it has happened in the cure of simple fractures that the bone has been protruded through the integuments either [illegible] by [illegible], moving them carelessly

[illegible] to light [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] the upper fragment of bone.

On the occurrence of an accident of this kind, we should first attend to the hemorrhage and then consider whether from the appearance of the limb, the state of the parts, the [illegible] of preservation would be warrantable, or from the nature and extent of the injury, connected with amputation would not be the most unexceptionable practice.

In private practice where the patient has the advantages of restorative dietetics from the Surgeon and the comforts of life with careful nursing &c. the case must be bad indeed wherein we have recourse to the knife.

On the other hand in the hurry and turmoil of a Battle by Sandy Sea where from the most reasonable calculations, the patient cannot have these conveniences, and early & favourable atten-

-cances must be present to justify the surgeon who would attempt to save the limb. Many cases happen in private practice where from a heavy and broad wheel or other weighty substance, running over, falling on, or climb the bones are comminuted and splintered and the soft parts lacerated and mashed so that their test ness is completely destroyed and where there is a prospect of gangrene and mortification from such destructions being the inevitable consequence [illegible]

[illegible] in private practice are frequently found [illegible] the case that the [illegible] of the patient to recovery of the surgeon has differed the [illegible] opinion, and contrary to what might have been [illegible] of the patient and his [illegible] [illegible]. [illegible] would it, not be [illegible] to draw conclusions from the successful result of a [illegible] [illegible] the adoption of an established rule which claims for its base [illegible] experience.

Mr Pott (whose excellent writings sufficiently attest his great judgement and complete acquaintance with the subject of Surgery) seems to think that generally [illegible] a compound fracture of the [illegible] or of both bones of the leg or forearm secure [illegible] agement that recourse must be had to immediate amputation [illegible] practice seems to [illegible] [illegible] or less severe untoward circumstances present themselves. Mr Benj Bell [illegible] articulates agree with him [illegible]

and the celebrated Larrey (whose experience in military surgery may be considered superior to that of almost any other writer, and whose brilliant genius will illuminate the records of surgery for ages yet to come!) seems to be opposed to early amputations, notwithstanding, he might think, with the other respectable writers above mentioned in cases occurring to private practitioners. His cases in personally requires the best and most careful treatment they receive from him, and though we find his knife in frequent use, yet many cases may be cited to show that he knew well when to forbear, and did not wantonly, from a desire to show his skill in using cutting instruments, deprive his patients of their limbs. Mr Bell speaking of cases of compound fracture which occur in private practice, appears to think that the postponement of amputation should in general be waived, and of

the cases which have come under his observation, except the quarter part died best, where the operation was delayed until necessity compelled its employment far, when it took place immediately.

Among the causes producing an unfavorable result, he enumerates 1st the fever, produced by the extensive wound, 2nd the perturbation and violent agitations, which the unexpected loss of blood must always induce, & lastly the great change produced in the circulation, by its removal, this state of body also serving incapacitates the patient for undergoing an operation, of such importance, while the longer one to which a preservative attempt necessarily reduces the patient, and his own reflections come in the over assistance, he being by this time convinced of its necessity.

Dr. Bell states this as the result of his ex

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-perienced, it is hard to oppose facts but I with the greatest diffidence, venture to observe that the reasons assigned by him, for delaying amputation, do not seem to be sufficiently cogent, 1st. the fever from the large wound; may we not ask would not this fever be increased by suffering the continuance of the exciting cause? 2d. the agitation would in all probability be embarrassing the poor patient twofold, at being, at least obliged to lose his limb, after having his reason to believe, from the Surgeon's not performing the operation immediately, that his limb would not be lost. 3d the change in the circulating system, I think matters with equal force in the delay, and I cannot agree that the patients reflections, will be a powerful auxiliary for it is an incontrovertible fact, that sailors bear operations of all kinds, better immediately af-

-ter the accidents which render them necessary may not reasonably conclude, that men in prosecute life would be very apt to do the same? I would not be understood as advocating a general use of the knife, but only decision in its employment when it is imperiously required for as our respectable Professor of Surgery very feelingly observes in a late lecture. "I am not so very fond of cutting instruments."

All practitioners agree that when amputation has not been performed immediately several days must elapse according to the violence and duration of the inflammatory symptoms, before it can be prudently resorted to.

It may be rendered necessary by various causes afterwards. Hemorrhage I find in some authors enumerated as one - particularly when the posterior tibial artery happens to be wounded but the ingenuity of Dr. Physick has placed in the

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hands of the Surgeon a contrivance which bids fair to supersede all necessity on that score. The next is Mortification, and lastly the delay of reunion, of the fractured ends of the bones, connected with a copious discharge of matter of hazardous import to the patients strength. These will be considered after the means advised for the preservation of the limb shall have been noticed.

After it has been determined to make an effort to save the limb, all extraneous matters, and small detached pieces of bone (if any) should be removed, and the wound enlarged, if too small, for their convenient extraction. The next consideration is the reduction of the fractures.

Perhaps most frequently than otherwise, the upper fragment is protruded and in extension, is more tightly girded than before by the

surrounding teguments, this when broad at
the base, and in such situation as to afford a
reasonable expectation of success if proper
opinions should be well founded to allow the
chance of saving the position of the limb and
of necessary making a clear incision but on
the contrary when an extremely sharp pro-
jecting portion has been forced through, one may be
supposed if acquainted with practical only pain-
ful irritations, and thereby endanger the safe-
ty of the limb. The saw will be very properly
employed for the complete removal of any other
fragment such as bone supposes, as may best
suit the surgeon.

The idea of making an incision for the pur-
pose of removing a fragment of bone may ap-
pear crude and unnecessary to some readers
present to me but when they reflect that
it is only through the skin we have to cut

for the most part and should it become necessary to carry the incision into the muscles that recent and most respectable on the treatment of compound fractures and as it is well known that a free incision heals more readily than even a small puncture there surely can be no reasonable objection to it.

K. among the latter the wounded necessary even to loose pieces of bone & we when the fracture is near the bottom in the best position, which will combine the advantages of keeping the fragments in apposition: ease to the patient, and a convenient rest to the wounded, a drooping wounded position.

To Dr. must expect to express myself with such clearness I must beg the reader to excuse from Dr. Dr. Dr. Dr. Dr. Dr. Dr. time.

"We are always to keep in mind the great importance of uniting the wounded to first intention.

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and thereby convert the accident to the nature of a simple fracture by which much danger and suffering will be prevented. Whatever circumstances therefore can keep the parts in a situation favourable for uniting by the first intention ought to be strictly observed of course whatever can prevent the inflammation from ever ascending the vessels grade; so, would splinting is often necessary in these cases"

"In fractures occasioned by Gunshot, and in others where uniting by the first intention, is impracticable, and suppuration must take place from the extensive contusion and laceration of the surrounding flesh a soft poultice of flour and milk, should be applied."

It will be necessary during the continuance of the suppuration, to dress the wound every day at least, and I have seen cases, in which on account of the warm weather, and also from

animalcules produced from the eggs deposited by Blue flies becoming very troublesome the nurse was obliged to drop 2 or 3 times in the twenty four hours. This profuse discharge will require the poultices to be laid more over the fistulous strength will necessarily be lost the matter must have free egress and if necessary an opening must be made in a more depending part (especially if it happens most often does) that detached piece of bone, which occasioned the previous notice of his surgeon be the cause of this discharge, which is inconceivable great, & disagreeable and serious the cure tedious in the extreme) as it will serve for its expulsion.

With respect to this profuse discharge it may be observed that from consider ing that great weakness is to follow a copious discharge of pus many surgeons do not carry the antiphlogistic plan to an useful extent, at least wishing to

keep the patients strength in reserve, and thus by permitting a great degree of inflammation to supervene produce the very evil they were anxious to guard against in their measures to be prescribed.

After all our care and attention, to severe cases of compound fractures which are accompanied with copious discharges for instrument. be over injudicious, it not unfrequently happens that the patients strength is in danger from this discharge, and amputation becomes the only alternative. Sir Cas Bell mentions an unmentionable circumstance that he has seen occasion it necessary to amputate, in this case when the bone has been shattered the fragments were always found superfluous and disjointed.

A strict attent. to the patients pulse and general health, h. respiration &c and diet to

the state of his limb, is necessary and the absence of febrile complaint, hardness, tumefaction, and inflammation, with a low, and weak pulse, languor, want of appetite, with a copious flow of pus from the wound, will be the signal for a vigorous employment of all his means for the restoration of the patients strength, and that of his limb, and success will sometimes very unexpectedly crown his efforts.

I should feel with having made an earnest, and a reasonable attempt at saving the limb, both he and his patient, will afterwards regard amputation with considerably less reluctance.

When no reunion takes place between the extremities of the fractured bone, no contrivance, no amiable improvement of Dr. Physick, with great expectations of success (the second) but as the soft parts sometimes present a great obstacle

by getting between the fractured ends as related by Dr. Dorsey, would not cutting upon, without removing the ends of the bone be preferable to compression? in a case so circumstanced Dr. Physick's seal on will unquestionably have the preference in all cases in which it can be employed but we speak hereof as in which it has been found ineffectual.

Dr. Lurvey of whom I have made mention above seems to think the patient better off, even without the section with all the respect I have for his opinion as a Surgeon, I am compelled to dissent here, and strenuously advise it whenever there is the chance of success

Dr. Dorsey (to whom every student of surgery in this country is under obligations for the assistance afforded them by his excellent work) says that the operation, sometimes by dint of cutting down to the ends of the bone, in the fore arm or leg is impracticable on account of the difficulty of separating from the muscles, the two bones, when each of these

parts [illegible] the [illegible] [illegible]
[illegible] [illegible] of [illegible] [illegible] the [illegible]
[illegible]."

With the greatest deference for such high authority, I beg leave to state, that the operation here has been performed in Edinburgh I have formerly my precepts that when there was bearing bones there a woman underwent the operation, whose forearm the interosseous ligament was suspected, has presented the obstacle, the disease and the injury the bone terminated unfavourably the woman completely recovered the use of her limb, without any difficulty, he can't before and after the operation.

All the time that the bone is fractured it sometimes injures in such a manner that you can see all alteration, as in [illegible] the protrusion of the bone may cause such a laceration of the parts [illegible] bring it on that

violence used in making extension improper or neglect to adhere to the rules in removing splinters of bone &c uneasy position of the limb, painful applications, inadequate, neglect of the antiphlogistic plan, of anodynes &c.

When exfoliation is likely to be the result of injury done to the limb at the time of the fracture, or if amputation should be performed, or should we wait till it has commenced, we should be determined by the species of gangrene whether to adopt it now or wait the separation to take place.

In the dry gangrene which indicates the separation of the dead from the living parts by a line of demarkation which penetrates nerves muscles &c the separation on not appear before the

Surgeon is justifiable in performing the operation in the gangrene proceeding from wounds, called moist or traumatick so well described by Larrey and which does not affect the deep seated parts it will be necessary to wait for this process of nature, and the sooner we can take the better as its progress is extremely rapid.*

In the dry gangrene although nature the operations of nature, yet as soon as she has indicated the fulfilment of her task, by a well defined line, all haste should be made, in removing the dead parts for fear of injury from the absorption the putrescent matter occasionally yields to gangrenous masses.

We may sometimes arrest the progress of gangrene according to Mr Pott and gain a separation of the sound from

* See young Barris case in his memoirs on surgery page 216 Vol II

the unsound parts, when it is not the immediate effect, of the torpid state of the parts but of a great degree of inflammation, general habit in bad condition, inconvenient posture or improper treatment of the limb. In order to do this we must attend to the causes producing this state of things, the bilious and sanguine will require depletion, and evacuation, we must assist the weak, and debilitated by proper regimen and medicines, and correct any existing errors in the treatment of the limb or wound, the judgement of the practitioner must be his guide in particular cases

He will make use of venesection and the antiphlogistic plan in general to subdue inflammation, and opiates will be required for irritation, and insomnia, and the Peruvian bark as a tonic

useful with cordial medicines at some periods, and cooling at others the most soothing applications, relaxing cataplasms &c will be necessary for tension and irritation of the mamis.

When Mortification is likely to ensue or in consequence of a high degree of inflammation, the employment of a blister is recommended by Dr Physick who from much experience is fully authorized to speak well of it it should be a large one or perhaps our intentions may not be answered.

Stimulating or tiaptic applications are universally denounced as prejudicial, for inflammation, tension, or to remove pain be severe & patients relapse, nor a kind suppuration in case of course a seperation of the parts produced by these indications which we should endeavour to fulfil.

Warm irritating applications have been used in Gunshot wounds under an erroneous persuasion that they were poisonous, and that applications of this kind assisted nature in throwing off the diseased parts.

Surgeons are more rationally treat Gunshot like other lacerated wounds.

That there are three points of time or stages of a severe compound fracture, in which amputation will be necessary, seems to be generally agreed on by practitioners, and a knowledge of them is required for their safe and correct observance.

Immediately after the accident previous to inflammation of the parts seems to be the first proper time a

neglect of this change is apt to have for its consequence gangrene, or a large suppuration, with formation and lodgement of matter. It has been already shewn how we should manage with respect to amputation, in gangrene and mortification, and in the case of profuse suppuration, we must be guided by the strength of the patient, compared with the state and discharge of the fracture or wound.

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Having now brought my remarks to a conclusion may I hope that they will answer their end and that the indulgence of which they stand so much in need, will be kindly extended to them.